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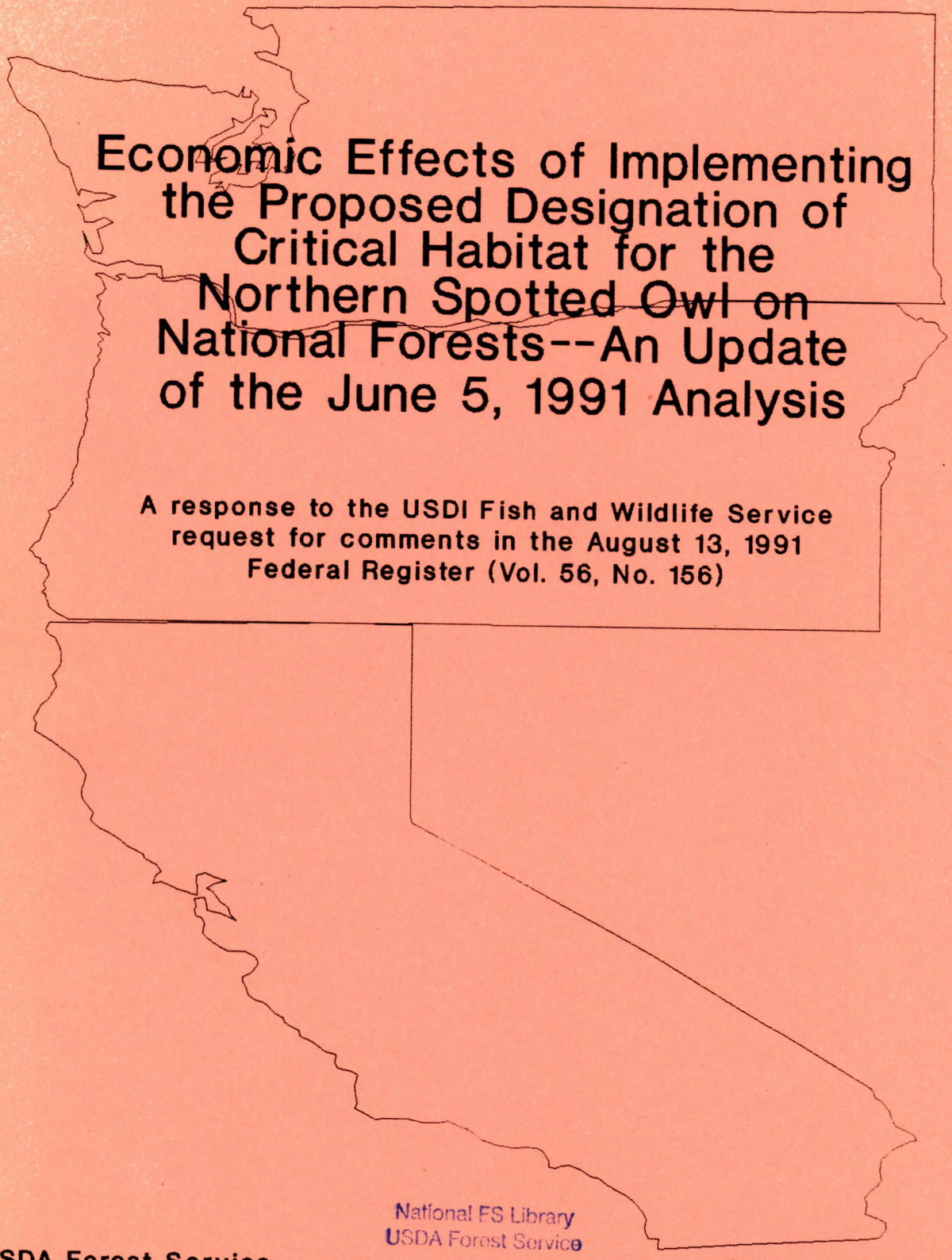

Economic Effects of Implementing the Proposed Designation of Critical Habitat for the Northern Spotted Owl on National Forests--An Update of the June 5, 1991 Analysis

A response to the USDI Fish and Wildlife Service request for comments in the August 13, 1991 Federal Register (Vol. 56, No. 156)

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INTRODUCTION

On April 3, 1990, an Interagency Scientific Committee (ISC) released a report entitled "A Conservation Strategy for the Northern Spotted Owl." In response to this report, the Secretaries of Agriculture and Interior, through the Chief of the Forest Service and the Director of the Bureau of Land Management formed an interagency working group to analyze the economic impacts of implementing the recommendations of the ISC. The findings of the interagency working group were presented in a May 1, 1990 report entitled "Economic Effects of Implementing a Conservation Strategy for the Northern Spotted Owl."

On May 6, 1991, the Department of Interior, Fish and Wildlife Service (F&WS) published in the Federal Register (Vol. 56, No. 87) a proposed designation of critical habitat for the northern spotted owl. The F&WS solicited public comments from other government agencies concerning the proposed rule. Comments that were particularly sought included:

> "any foreseeable economic and other impacts resulting from the proposed designation of critical habitat."

The USDA Forest Service responded with comments in a June 5, 1991 report, "Economic Effects of Implementing the Proposed Designation of Critical Habitat for the Northern Spotted Owl on National Forests: A response to the USDI Fish and Wildlife Service request for comments in the May 6, 1991 Federal Register (Vol. 56, No. 87)."

On August 13, 1991, the F&WS published in the Federal Register (Vol. 56, No. 156) a revised proposed designation of critical habitat. As for the May 6 proposal, the F&WS solicited public comment from other government agencies concerning the proposed rule. Comments that were particularly sought again included:

> "any foreseeable economic or other impacts resulting from the proposed designation of critical habitat."

The purpose of this report is to update the analysis provided to the F&WS in response to the May 6 proposal. For affected National Forests, the report updates information on impacts of the proposed rule for employment, timber revenues, and payments to States from these revenues. These comments to the F&WS build on the existing analyses of the economic impacts of implementing the recommendations of the ISC Strategy and proposed designation of critical habitat. The comments:

- Provide a review of volumes that may be affected on National Forests from implementation of final forest plans.
- Provide revised estimates of harvests and associated economic impacts of implementing the ISC recommendations on National Forests.
- Provide estimates of harvests and associated economic impacts if harvesting is allowed in the proposed critical habitat areas on National Forests.
- Provide estimates of harvests and associated economic impacts if no harvesting is allowed in the proposed critical habitat areas (CHAs) on National Forests.

These comments were prepared by the Forest Service, USDA. The following team provided leadership in completing the report:

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SUMMARY OF UPDATE

On August 13, 1991, the Department of Interior, Fish and Wildlife Service published in the Federal Register a proposed designation of critical habitat for the northern spotted owl and solicited comments on any foreseeable economic and other impacts. This analysis reports USDA Forest Service comments on timber-related economic impacts of the proposed designation of critical habitat. It is an update of the June 5, 1991 analysis. The table numbers here correspond to the tables in the June 5 report:

- Tables I-V summarize the impacts on affected National Forests by State.
- Tables 1-4 show impacts by National Forest.
- Table A-1 compares the results of the June 5, 1991 analysis with the results of this update.
- Table A-2 shows incremental changes in volume and employment for final plans, ISC Strategy, and critical habitat (with and without harvest) for the June 5 analysis and for this update.
- For information, the Update contains the table of contents for the June 5, 1991 Forest Service analysis.

Economic Impact

The analysis of economic impacts in Washington, Oregon, and California compares base volumes for National Forests with volumes remaining after implementation of the spotted owl conservation strategy and designation of proposed critical habitat. "Base volumes" for the National Forests are final Forest Plans or draft Forest Plans where plans had not been finalized as of mid-1990.

The analysis considers the entire timber market economy. The effects of a timber supply reduction on National Forests in Washington, Oregon, and California were analyzed nationally in terms of changes in price, consumption, trade, and interregional shifts in supply. These national impacts are reported in the June 5 Forest Service response to the F&WS proposal of May 6.

The analysis shows expected changes in employment as a result of National Forest timber supply reductions. Changes in prices will also affect revenues to the Federal Treasury and payments to States in the three affected States. The analysis shows that rising prices will offset reductions in timber volumes, but large reductions in receipts will occur.

With one exception, all assumptions and methods used in this report are identical to those used in developing the response to the May 6 proposal.

The analyses differ with respect to the amount of employment associated with each million board feet of timber harvested from National Forests. The employment coefficient was reexamined in response to comments on the June 5 analysis and the new coefficient reflects four changes:

- Inclusion of Federal employment directly in IMPLAN--the input-output computer modeling system--(accounts for an additional 2.3 employees per million board feet). The June 5 analysis showed effects on Federal employment separately.
- Use of new procedures that tie estimates of direct employment per million board feet to empirical data rather than estimates within the model (accounts for an additional 1.0 person per million board feet).

- Use of new information on the mix of uses such as lumber and veneer, for timber harvested on National Forests (accounts for an additional 0.8 people per million board feet).
- Inclusion in IMPLAN of further processing of chips, peeler cores, and other by-products from plywood and saw mills (accounts for an additional 0.3 people per million board feet).

Overall, these changes resulted in an employment coefficient of 15 people per million board feet of timber harvested in this analysis compared with a coefficient of 10.6 in the June 5 analysis. The coefficient includes direct employment and the multiplier effect of direct, indirect, and induced employment (these terms are explained on page 33 of the June 5 analysis).

In summary, the analysis shows:

- Anticipated allowable sale quantity (ASQ) on affected National Forests will decline by 2.5 billion board feet if harvest were to be excluded in all proposed critical habitat and 2.4 billion board feet if some harvest were to be allowed in critical habitat. (Tables I and II)1/

- Compared with the results of the June 5 analysis, the update of impacts on ASQ shows that the revised proposed designation of critical habitat would result in volume being about 75 million board feet lower than previously estimated. (Table A-1)

- Under base volume levels of allowable sale quantity on affected Forests, National Forest harvest levels would support 57,429 jobs in total; about half of these are direct employment in the forest industry. The loss in total employment by 1995 in response to the National Forest harvest volume reduction would be 35,686 to 37,346 jobs, depending on whether or not some harvest is allowed in the proposed designated critical habitat on these National Forests. (Table III)1/

- As compared with the June 5 analysis, most of the increased reduction in number of jobs shown here is due to use of revised employment coefficients per million board feet of timber harvested; overall, the coefficient used here is 42 percent higher. (Table A-2)

- Rising prices will help offset loss in revenues to the Treasury, but by 1995, implementation of the proposed critical habitat designation with total exclusion of harvest would mean a decline of $545 million and by 2000, a decline of $467 million as compared with revenues from the "base volume" level of harvest. Under one scenario for limited harvest in the proposed critical habitat, the revenue decline would be offset by less than $35 million. (Table IV)1/

1/ Under the scenario used in this analysis for limited harvest in critical habitats the ASQ volume obtained from critical habitat outside HCA's would be on average about 23 percent of the amount that could be obtained under the guidelines of the ISC Strategy (i.e., the 50-11-40 rule). The August 13, 1991, proposal does not specify exact criteria to be followed in critical habitat outside HCA's, but estimates the harvest would be between 10 and 30 percent of what would otherwise be obtainable.

- Payments to States will decline despite rising prices. In total, the decline would be about $131 million by 1995 and $115 million by 2000 if harvest is excluded from the proposed critical habitat. If limited harvest is permitted, the decline would be offset by about $8 million in 1995 and $4 million in 2000. (Table V)

Table I. National Forest Anticipated Allowable Sale Quantity (ASQ) Under two Assumptions About Timber Availability in Critical Habitat Areas.

National Forests Affected by the Critical Habitat Determination	Base Volume[1/]	Actual or Projected Final Plans	Actual or Projected Final Plans Plus ISC Strategy	Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination	
				Estimated Sale Capability both Within and Outside Critical Habitat	Total Exclusion of Harvest from Critical Habitat
	Million Board Feet				
Washington National Forests	943	752	328	255	237
Oregon National Forests	2,196	1,846	1,214	956	891
California National Forests	694	600	282	231	202
Total National Forests	3,833	3,198	1,824	1,442	1,330

1/ Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

Table II. Changes in National Forest Anticipated Allowable Sale Quantity Under two Assumptions About Timber Availability in Critical Habitat Areas.[1/]

National Forests Affected by Critical Habitat Determination	Base Volume[2/]	Actual or Projected Final Plans	Actual or Projected Final Plans Plus ISC Strategy	Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination	
				Estimated Sale Capability both Within and Outside Critical Habitat	Total Exclusion of Harvest from Critical Habitat
	----------	----------	Million Board Feet	----------	----------
Washington National Forests	943	-191	-615	-688	-706
Oregon National Forests	2,196	-350	-982	-1,240	-1,305
California National Forests	694	-94	-412	-463	-492
Total National Forests	3,833	-635	-2,009	-2,391	-2,503

1/ Changes are cumulative as compared with the base volume.

2/ Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

Table III. Changes in Timber-based Employment Under two Assumptions About Timber Availability in Critical Habitat Areas.[1/]

National Forests Affected by the Critical Habitat Determination	Actual or Projected Final Plans	Actual or Projected Final Plans Plus ISC Strategy	Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Estimated Sale Capability both Within and Outside Critical Habitat	Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Total Exclusion of Harvest from Critical Habitat
	Number of Jobs			
Washington National Forests	-2,573	-8,508	-9,465	-9,698
Oregon National Forests	-5,815	-16,150	-20,257	-21,307
California National Forests	-1,217	-5,286	-5,964	-6,341
Total National Forests	-9,605	-29,944	-35,686	-37,346

1/ Changes are cumulative as compared with employment supported by Allowable Sale Quantity in existing draft or final plans as of May 1, 1990. The analysis of June 5, 1991 used an over-all employment coefficient of 10.6 people--direct, indirect, and induced--per million board feet of ASQ and the October 15, 1991 analysis used a coefficient of 15 people per million board feet. The change was made in response to comments on the June 5 analysis and reflects four changes: Inclusion of Federal employment directly in IMPLAN (accounts for 2.3 employees per million board feet); use of new procedures that tie estimates of direct employment per million board feet to empirical data (accounts for 1.0 person per million board feet); use of new information on the mix of uses, such as lumber and veneer, for timber harvested from National Forests (accounts for 0.8 people per million board feet); and inclusion in IMPLAN of processing of chips, peeler cores, and other by-products from plywood and saw mills (accounts for 0.3 people per million board feet).

Table IV. Timber-based Revenue Under two Assumptions About Timber Availability in Critical Habitat Areas.

National Forests Affected by the Critical Habitat Determination	Base Volume[1/]		Actual or Projected Final Plans		Actual or Projected Final Plans Plus ISC Strategy		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Estimated Sale Capability both Within and Outside Critical Habitat		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Total Exclusion of Harvest from Critical Habitat	
	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000
	Millions of 1990 Dollars									
Washington National Forests	204	188	180	155	89	79	65	61	61	59
Oregon National Forests	617	564	596	524	462	420	353	326	333	315
California National Forests	176	143	182	169	85	76	66	59	58	54
Total National Forests	997	895	958	848	636	575	484	446	452	428

1/ Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

Table V. Payments to States Under two Assumptions About Timber Availability in Critical Habitat Areas.

National Forests Affected by the Critical Habitat Determination	Base Volume 1/		Actual or Projected Final Plans		Actual or Projected Final Plans Plus ISC Strategy		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Estimated Sale Capability both Within and Outside Critical Habitat		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Total Exclusion of Harvest from Critical Habitat	
	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000
	Thousands of 1990 Dollars									
Washington National Forests	46,193	42,365	40,790	35,195	20,260	18,011	14,835	13,845	13,823	13,308
Oregon National Forests	148,612	138,732	141,622	123,775	109,131	98,780	83,678	77,365	78,955	75,084
California National Forests	44,073	35,880	45,434	42,170	21,185	18,943	16,513	14,906	14,494	13,409
Total National Forests	238,878	216,977	227,846	201,140	150,576	135,734	115,026	106,116	107,272	101,801

1/ Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

Table 1. National Forest Anticipated Allowable Sale Quantity Under two Assumptions About Timber Availability in Critical Habitat Areas.

National Forests Affected by the Critical Habitat Determination	Base Volume[1/]	Actual or Projected Final Plans	Actual or Projected Final Plans Plus ISC Strategy[2/]	Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Estimated Sale Capability both Within and Outside Critical Habitat[3/]	Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Total Exclusion of Harvest from Critical Habitat
	Million Board Feet				
Washington National Forests					
Gifford Pinchot	388	334	166	113	100
Mt. Baker-Snoqualmie	170	108	32	26	24
Okanogan	63	63	56	55	54
Olympic	186	111	20	13	12
Wenatchee	136	136	54	48	47
Subtotal	943	752	328	255	237
Oregon National Forests					
Deschutes	202	100	73	71	71
Mt. Hood	255	189	138	104	95
Rogue River	137	120	50	43	41
Siskiyou	160	160	126	104	98
Siuslaw	335	335	172	120	107
Umpqua	340	334	263	208	195
Willamette	568	491	275	194	174
Winema	199	117	117	112	110
Subtotal	2,196	1,846	1,214	956	891
California National Forests					
Klamath	200	142	96	89	80
Mendocino	93	84	27	23	21
Shasta-Trinity	226	224	82	60	50
Six Rivers	175	150	77	59	51
Subtotal	694	600	282	231	202
Total Forest Service	3,833	3,198	1,824	1,442	1,330

1/ Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

2/ Compared with the June 5 report, allowable sale quantities for most National Forests in Washington and Oregon were changed to better reflect the effects of 50-11-40. No changes were made in California National Forests.

3/ For Washington and Oregon National Forests, harvest in proposed critical habitat outside of HCAs was calculated by taking 20 percent of the allowable sale quantity available within this habitat after applying 50-11-40. For California National Forests, five percent of standing inventory (R-5 regulation class 3) was used to estimate harvest in proposed critical habitat outside of HCAs. The 50-11-40 rule was applied outside HCAs and proposed critical habitat areas.

Table 2. Timber-based Employment[1/] Under two Assumptions about Timber Availability in Critical Habitat Areas.

National Forests Affected by the Critical Habitat Determination	Base Volume[2/]	Actual or Projected Final Plans	Actual or Projected Final Plans Plus ISC Strategy	Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Estimated Sale Capability both Within and Outside Critical Habitat	Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Total Exclusion of Harvest from Critical Habitat
	----------	----------	Number of Jobs	----------	----------
Washington National Forests					
Gifford Pinchot	4,823	4,152	2,063	1,405	1,243
Mt. Baker-Snoqualmie	2,441	1,551	460	373	345
Okanogan	746	746	663	651	639
Olympic	2,509	1,497	270	175	162
Wenatchee	2,396	2,396	951	846	828
Subtotal	12,915	10,342	4,407	3,450	3,217
Oregon National Forests					
Deschutes	3,517	1,741	1,271	1,236	1,236
Mt. Hood	3,417	2,533	1,849	1,394	1,273
Rogue River	2,224	1,948	812	698	665
Siskiyou	2,555	2,555	2,012	1,661	1,565
Siuslaw	5,548	5,548	2,848	1,987	1,772
Umpqua	4,838	4,753	3,742	2,960	2,761
Willamette	9,968	8,617	4,826	3,405	3,054
Winema	3,502	2,059	2,059	1,971	1,936
Subtotal	35,569	29,754	19,419	15,312	14,262
California National Forests					
Klamath	2,372	1,684	1,139	1,056	949
Mendocino	1,103	996	320	273	249
Shasta-Trinity	2,680	2,657	973	712	593
Six Rivers	2,790	2,391	1,227	940	813
Subtotal	8,945	7,728	3,659	2,981	2,604
Total Forest Service	57,429	47,824	27,485	21,743	20,083

1/ The analysis of June 5, 1991 used an over-all employment coefficient of 10.6 people--direct, indirect, and induced--per million board feet of ASQ and the October 15, 1991 analysis used a coefficient of 15 people per million board feet. The change was made in response to comments on the June 5 analysis and reflects four changes: Inclusion of Federal employment directly in IMPLAN (accounts for 2.3 employees per million board feet); use of new procedures that tie estimates of direct employment per million board feet to empirical data (accounts for 1.0 person per million board feet); use of new information on the mix of uses, such as lumber and veneer, for timber harvested from National Forests (accounts for 0.8 people per million board feet); and inclusion in IMPLAN of processing of chips, peeler cores, and other by-products from plywood and saw mills (accounts for 0.3 people per million board feet).

2/ Base volume for calculating these employment figures is the Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

Table 3. Timber-based Revenue Under two Assumptions About Timber Availability in Critical Habitat Areas.

National Forests Affected by the Critical Habitat Determination	Base Volume 1/		Actual or Projected Final Plans		Actual or Projected Final Plans Plus ISC Strategy		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination			
							Estimated Sale Capability both Within and Outside Critical Habitat		Total Exclusion of Harvest from Critical Habitat	
	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000
	Millions of 1990 Dollars									
Washington National Forests										
Gifford Pinchot	88	75	83	74	50	46	34	31	30	29
Mt. Baker-Snoqualmie	45	39	32	28	11	11	9	8	9	8
Okanogan	9	12	12	9	12	8	10	10	10	10
Olympic	43	37	28	25	6	6	4	4	4	4
Wenatchee	19	25	25	19	10	8	8	8	8	8
Subtotal	204	188	180	155	89	79	65	61	61	59
Oregon National Forests										
Deschutes	35	46	23	17	17	13	15	15	15	16
Mt. Hood	72	62	59	52	52	48	39	36	37	34
Rogue River	33	28	31	28	16	15	14	12	13	12
Siskiyou	53	45	58	52	55	51	45	41	44	41
Siuslaw	113	97	124	111	77	72	54	49	49	46
Umpqua	95	81	103	92	98	91	77	71	74	69
Willamette	172	147	164	146	111	103	78	71	71	66
Winema	44	58	34	26	36	27	31	31	30	31
Subtotal	617	564	596	524	462	420	353	326	333	315
California National Forests										
Klamath	29	24	24	22	17	15	16	14	14	13
Mendocino	24	19	25	23	8	8	7	6	7	6
Shasta-Trinity	68	55	78	73	30	27	21	19	18	17
Six Rivers	55	45	55	51	30	26	22	20	19	18
Subtotal	176	143	182	169	85	76	66	59	58	54
Total Forest Service	997	895	958	848	636	575	484	446	452	428

1/ Base volume for calculating revenues is the Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

Table 4. Payments to States Under two Assumptions About Timber Availability in Critical Habitat Areas.

National Forests Affected by the Critical Habitat Determination	Base Volume 1/		Actual or Projected Final Plans		Actual or Projected Final Plans Plus ISC Strategy		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Estimated Sale Capability both Within and Outside Critical Habitat		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Total Exclusion of Harvest from Critical Habitat	
	1995	2000	1995	2000	1995	2000	1995	2000	1995	2000
	Thousands of 1990 Dollars									
Washington National Forests										
Gifford Pinchot	20,375	17,412	19,293	17,221	11,570	10,778	7,876	7,175	7,113	6,636
Mt. Baker-Snoqualmie	10,264	8,771	7,173	6,402	2,564	2,389	2,084	1,898	1,963	1,831
Okanogan	2,000	2,646	2,646	1,969	2,478	1,862	2,173	2,159	2,133	2,214
Olympic	9,382	8,017	6,159	5,497	1,339	1,247	870	793	820	765
Wenatchee	4,172	5,519	5,519	4,106	2,309	1,735	1,832	1,820	1,794	1,862
Subtotal	46,193	42,365	40,790	35,195	20,260	18,011	14,835	13,845	13,823	13,308
Oregon National Forests										
Deschutes	14,454	19,120	9,465	7,042	7,280	5,470	6,320	6,280	6,320	6,560
Mt. Hood	15,575	13,309	12,698	11,334	11,187	10,421	8,431	7,680	7,860	7,332
Rogue River	7,257	6,202	6,992	6,241	3,515	3,275	3,023	2,754	2,942	2,744
Siskiyou	11,203	9,574	12,324	11,000	11,710	10,908	9,666	8,805	9,295	8,671
Siuslaw	26,908	22,994	29,599	26,419	18,337	17,081	12,793	11,654	11,642	10,860
Umpqua	21,291	18,194	23,007	20,535	21,860	20,362	17,288	15,749	16,456	15,351
Willamette	41,315	35,305	39,286	35,065	26,549	24,731	18,729	17,062	17,144	15,993
Winema	10,609	14,034	8,251	6,139	8,693	6,532	7,428	7,381	7,296	7,573
Subtotal	148,612	138,732	141,622	123,775	109,131	98,780	83,678	77,365	78,955	75,084
California National Forests										
Klamath	7,414	6,036	6,108	5,669	4,312	3,855	3,913	3,532	3,555	3,289
Mendocino	6,332	5,155	6,636	6,159	2,227	1,992	1,857	1,676	1,714	1,586
Shasta-Trinity	16,269	13,244	18,709	17,365	7,152	6,395	5,122	4,624	4,314	3,991
Six Rivers	14,058	11,445	13,981	12,977	7,494	6,701	5,621	5,074	4,911	4,543
Subtotal	44,073	35,880	45,434	42,170	21,185	18,943	16,513	14,906	14,494	13,409
Total Forest Service	238,878	216,977	227,846	201,140	150,576	135,734	115,026	106,116	107,272	101,801

1/ Base volume for calculating payments to States is the Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

Table A-1. A Comparison of the June 5, 1991, Analysis of Economic Effects with the Analysis in this Report, for National Forests Only.[1/]

National Forests Affected by the Critical Habitat Determination	Base Volume[2/]		Actual or Projected Final Plans		Actual or Projected Final Plans Plus ISC Strategy		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Estimated Sale Capability both Within and Outside Critical Habitat		Actual or Projected Final Plans and ISC Strategy plus Implementation of the Proposed Critical Habitat Determination: Total Exclusion of Harvest from Critical Habitat	
	6/5/91	10/15/91	6/5/91	10/15/91	6/5/91	10/15/91	6/5/91	10/15/91	6/5/91	10/15/91
Washington National Forests										
ASQ (million board feet)	943	943	752	752	368	328	311	255	294	237
Timber-based Employment	10,518	12,915	8,414	10,342	4,089	4,407	3,432	3,450	3,243	3,217
Timber-based Revenue(mill $)	188	188	155	155	89	79	75	61	74	59
Payments to States (mill $)	42	42	35	35	20	18	17	14	17	13
Oregon National Forests										
ASQ (million board feet)	2,196	2,196	1,844	1,846	1,160	1,214	949	956	884	891
Timber-based Employment	22,742	35,569	19,490	29,754	12,042	19,419	9,809	15,312	9,116	14,262
Timber-based Revenue(mill $)	564	564	523	524	400	420	325	326	316	315
Payments to States (mill $)	139	139	124	124	94	99	78	77	75	75
California National Forests										
ASQ (million board feet)	694	694	600	600	282	282	261	231	226	202
Timber-based Employment	7,510	8,945	6,572	7,728	3,078	3,659	2,839	2,981	2,447	2,604
Timber-based Revenue(mill $)	143	143	169	169	76	76	69	59	61	54
Payments to States (mill $)	36	36	42	42	19	19	17	15	15	13
Total Forest Service										
ASQ (million board feet)	3,833	3,833	3,196	3,198	1,810	1,824	1,521	1,442	1,404	1,330
Timber-based Employment	40,770	57,429	34,476	47,824	19,213	27,485	16,080	21,743	14,806	20,083
Timber-based Revenue(mill $)	895	895	847	848	565	575	469	446	451	428
Payments to States (mill $)	217	217	201	201	133	136	112	106	107	101

1/ Data are for the Year 2000.

2/ Allowable Sale Quantity (ASQ) in Forest Plans as of May, 1990; includes final Forest Plans or draft Forest Plans where plans had not been finalized.

Table A-2. Incremental Changes in Timber Volume and Employment in Northern Spotted Owl-affected Areas of Washington, Oregon, and California--National Forests Only, 2000.

National Forest Change from Base Volume to:	June 5, 1991 Analyis of Proposed Critical Habitat			October 15, 1991 Analysis of Proposed Critical Habitat	
	Timber Volume	Employment[1/]		Timber Volume	Employment
	MMBF	With Original Employment Coefficients	With Updated Employment Coefficients	MMBF	Jobs
		Jobs			
Final Plans	- 637	- 6,294	- 9,641	- 635[2/]	- 9,605
ISC Strategy	- 1,386	-15,263	-20,490	- 1,373[3/]	-20,339
Critical Habitat					
- Some Harvest Capability	- 289	- 3,133	- 4,359	- 383	- 5,742
- Total Exclusion of Harvest	- 406	- 4,407	- 6,121	- 495	- 7,402
Total National Forest					
- Some Harvest Capability	- 2,312	-24,690	-34,490	- 2.391	-35,686
- Total Exclusion of Harvest	- 2,429	-25,964	-36,252	- 2,503	-37,346

1/ The analysis of June 5, 1991 used an over-all employment coefficient of 10.6 people--direct, indirect, and induced--per million board feet of ASQ and the October 15, 1991 analysis used a coefficient of 15 people per million board feet. The change was made in response to comments on the June 5 analysis and reflects four changes: Inclusion of Federal employment directly in IMPLAN (accounts for 2.3 employees per million board feet); use of new procedures that tie estimates of direct employment per million board feet to empirical data (accounts for 1.0 person per million board feet); use of new information on the mix of uses, such as lumber and veneer, for timber harvested from National Forests (accounts for 0.8 people per million board feet); and inclusion in IMPLAN of processing of chips, peeler cores, and other by-products from plywood and saw mills (accounts for 0.3 people per million board feet).

2/ Changes between the two analyses reflect a 2 million board foot increase in the Winema National Forest Plan.

3/ The change in volume reflects reassessment of allowable sale quantities after accounting for 50-11-40 on a forest-by-forest basis in Region 6. For the June 5 analysis, allowable sale quantities were reduced 10 percent for each Forest. There were no changes in allowable sale quantities for the ISC Strategy on Region 5 National Forests.

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